

APD ATTACHMENT

Mewbourne Oil Company Chalk Bluff Federal Comm. #3 NM-016788
1980' FSL & 990' FEL Sec. 1-T18S-R27E Eddy County, NM.

- 1.) Casing Design and Safety Factors (See schedule 1 for used casing design program.)
- 2.) Cement Program for Casing Strings.
Surface Casing:
250 sacks of Class "C" containing 2% CaCL₂ + 1/4#/sack of cellophane flakes followed by 200 sacks of Class "C" containing 3% CaCL₂.

Intermediate Casing:
700 sacks of Class "C" containing 6% gel + 2% CaCL₂ + 1/2#/sack of cellophane flakes + 5#/sack of Gilsonite followed by 200 sacks of Class "C" containing 3% CaCL₂.

Production Casing:
A cement diverter tool (D. V. Tool) will be run at a depth of approximately 7500' from surface.
1st Stage:
850 sacks of Class "H" containing 5#/sack KCL + .7% fluid loss additive + 5#/sack compressive strength extender.
2nd Stage:
900 sacks of Class "C" Lite containing 1/2#/sack cellophane flakes + 5#/sack Gilsonite + .4% fluid loss extender followed by 100 sacks of Class "H" containing .4% fluid loss additive + 5#/sack compressive strength extender.
- 3.) Drilling time will require approximately 35 - 40 days and drilling operations should begin approximately November 1, 1992.
- 4.) The possibility of encountering H₂S gas in this area remote. Mewbourne Oil Company has drilled offset wells to this proposed location and none of these wells have encountered any H₂S gas in the Pennsylvanian. In the event H₂S is encountered, the necessary H₂S safety equipment will be installed on location to provide for a safe working environment.
- 5.) Anticipated formation temperature and pressure in the Morrow zone will be approximately 155 degrees fahrenheit and 3,000# psi.

- 6.) This location is a non-standard location. A hearing is scheduled for October 15, 1992 in Santa Fe, New Mexico before the New Mexico Oil Conservation Division for an unorthodox location exception.
- 7.) The pressure rating on the BOP STACK (see exhibit "D" of the APD) is 3,000# psi. The correct pressure rating of ANSI 900 series is noted in the APD. The API standard for pressure ratings for flanged equipment is in ANSI series. ANSI 600 series is 2,000# psi working pressure, ANSI 900 series is 3,000# psi working pressure, ANSI 1500 series is 5,000# psi working pressure.

SCHEDULE ONE

LEASE NAME:	CHALK BLUFF FEDERAL #3	TYPE OF CSG STRING:	PRODUCTION
LEGAL:	SEC 1-18S-27E	DEPTH OF CSG:	10,300

CASING MINIMUM PERFORMANCE PROPERTIES

CSG TYPE	K-FACTOR	COLLAPSE	BURST	TENSION
1 5 1/2" 20# N-80 LT&C	991,000	8830	9190	428000
2 5 1/2" 17# N-80 LT&C	844,000	6380	7740	348000
3 5 1/2" 20# N-80 LT&C	991,000	8830	9190	428000
4				
5				

GRADE OF CASING: 85 % OF NEW

CSG TYPE	COLLAPSE	BURST	TENSION
1 5 1/2" 20# N-80 LT&C	7506	7812	363800
2 5 1/2" 17# N-80 LT&C	5423	6579	295800
3 5 1/2" 20# N-80 LT&C	7506	7812	363800
4 0	0	0	0
5 0	0	0	0

SETTING DEPTH (WT. OF CSG IN AIR)		CASING	INTERVAL	INTERVAL	CUMMULATIVE
FROM	TO	WT. (LB/FT)	LGTH (FT.)	WT. (LBS)	WT. (LBS)
1 0	1,000	20	1000	20,000	181,100
2 1,000	9,300	17	8300	141,100	161,100
3 9,300	10,300	20	1000	20,000	20,000
4 0			0	0	0
5 0			0	0	0

WELLBORE CONDITIONS

MUD WEIGHT: 9.6 PPG
BOUYANCY FACTOR 0.853 (AIR = 1)
DISPLACEMENT FLUID WT: 8.5 PPG

		ANNULAR	COLLAPSE	HOLE	
		HYDROSTATIC	W/AXIAL	HYDROSTATIC	TENSION
DEPTH		PRESSURE	LOADING	PRESSURE	
	0	0		0	154,478
1	1000	499	5982	442	137,418
2	9300	4643	5290	4111	17,060
3	10300	5142	7506	4553	0
4	0	0	ERR	0	0
5	0	0	ERR	0	0

FINIAL CASING DESIGN

SAFTEY FACTORS

				COLLAPSE	BURST	TENSION
				>1.125	>1.00	>2.00
FROM	TO	LENGTH				
0	0	0		ERR	ERR	ERR
0	0	0		ERR	ERR	ERR
5 1/2" 20# N-80 LT&C	10,300 9,300	1000		1.460	1.716	21.325
5 1/2" 17# N-80 LT&C	9,300 1,000	8300		1.139	1.600	2.153
5 1/2" 20# N-80 LT&C	1,000 0	1000		11.983	17.673	2.355